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SOME INDIAN BURIALS FROM SOUTHEASTERN MASSACHUSETTS

Part 1

By

MAURICE ROBBINS*

There is little definite information in archaeological literature concerning either the mortuary customs or the morphology of the Indians of southeastern Massachusetts.

The publications of several archaeological societies have, from time to time, contained descriptions of individual burials from the area. David I. Bushnell Jr., writing for the Bureau of American Ethnology (Bulletin #71) quotes early accounts and mentions more recent discoveries of this nature. Dr. C. C. Willoughby, in his "Antiquities of the New England Indians", furnishes detailed information concerning his work in northern New England and mentions some Indian burials in Beverly, East Windsor, Ipswich, and Manchester, Massachusetts.

While directing the work of the Warren King Moorehead Chapter of the Massachusetts Archaeological Society at the Titicut Site in Bridgewater, Massachusetts, the writer gathered data from a series of twenty Indian burials of which two were secondary interments of cremated skeletons. Serving in a similar capacity with the Cohannet Chapter at the Wapanucket Site in Middleboro, Massachusetts, he assisted in the excavation of six burials of which four were also secondary interments of cremated skeletons.

Prior to the work at the Titicut Site the Middleboro Archaeological Society, now disbanded, excavated a number of Indian burials at West Wareham, Massachusetts. The writer assisted in the excavation of two of these burials and has since come into possession of some of the unpublished records of that site.

It is felt that this considerable amount of data should be made available and it is accordingly presented herewith. Due to the length of the manuscript it will be published in two parts. Part 1 will include the burials at Titicut, while Part 2 will describe the work at Wapanucket and West Wareham.

THE TITICUT BURIALS

During the course of our work at the Titicut Site in Bridgewater, Massachusetts, the remains of twenty-six individuals were found. Fifteen of these skeletons were sufficiently preserved to be removed for further study. This study was undertaken on our behalf by the Department of Physical Anthropology at Peabody Museum, Harvard University. We are

indebted to Dr. Edward E. Hunt Jr. and to the late Dr. Ernest A. Hooten for the morphological notes which are included in this paper.

The majority of the burials were located in the northern section of the site, west of a trench excavated by the Robert S. Peabody Foundation of Phillips Academy Andover, Massachusetts, and east of the woods road that bisects the Titicut Site. As shown in Fig. 1, eighteen of the graves were grouped within an area approximately twenty-eight meters by ten meters. One human burial was found west of the above mentioned road and excavated by a representative of the R. S. Peabody Foundation. Nearby, the burial of a small dog was located.

A brief history of the cemetery area will serve to illustrate the reason for the method of excavation and will explain the lack of certain pertinent data. At the time at which the excavation of the area was undertaken it was covered by a rather dense growth of white pine. Neither we nor the owner of the property wished to see this beautiful grove destroyed. It was therefore considered impractical to establish the usual grid, or to excavate the entire area. Instead the cemetery area was explored by means of a small probe which brought cores of earth to the surface and indicated the presence of subsurface areas of disturbance. A series of numbered stakes were then placed to facilitate the location of individual graves upon a plan of the cemetery. North of burials #6 and #13 a deposit of medium heavy gravel marked the limits of the cemetery in that direction, while completely excavated areas to the east and south indicated its extent in those directions. There is no reason to assume that additional burials may not exist across the wood road to the west. Indeed the discovery of one burial in that area by the R. S. Peabody Foundation indicates a distinct possibility.

Many years ago a farm house and a large barn are known to have stood approximately fifty yards north and west of the cemetery area. We were told by an elderly man who had once lived in this house that at one time an orchard of apple and peach trees occupied that portion of the farm where the burials were located. After a time these trees were removed

*—The author is greatly indebted to William S. Fowler for the sketches of the Titicut burials which were made while the skeletons were in situ and for the illustrations of grave goods.

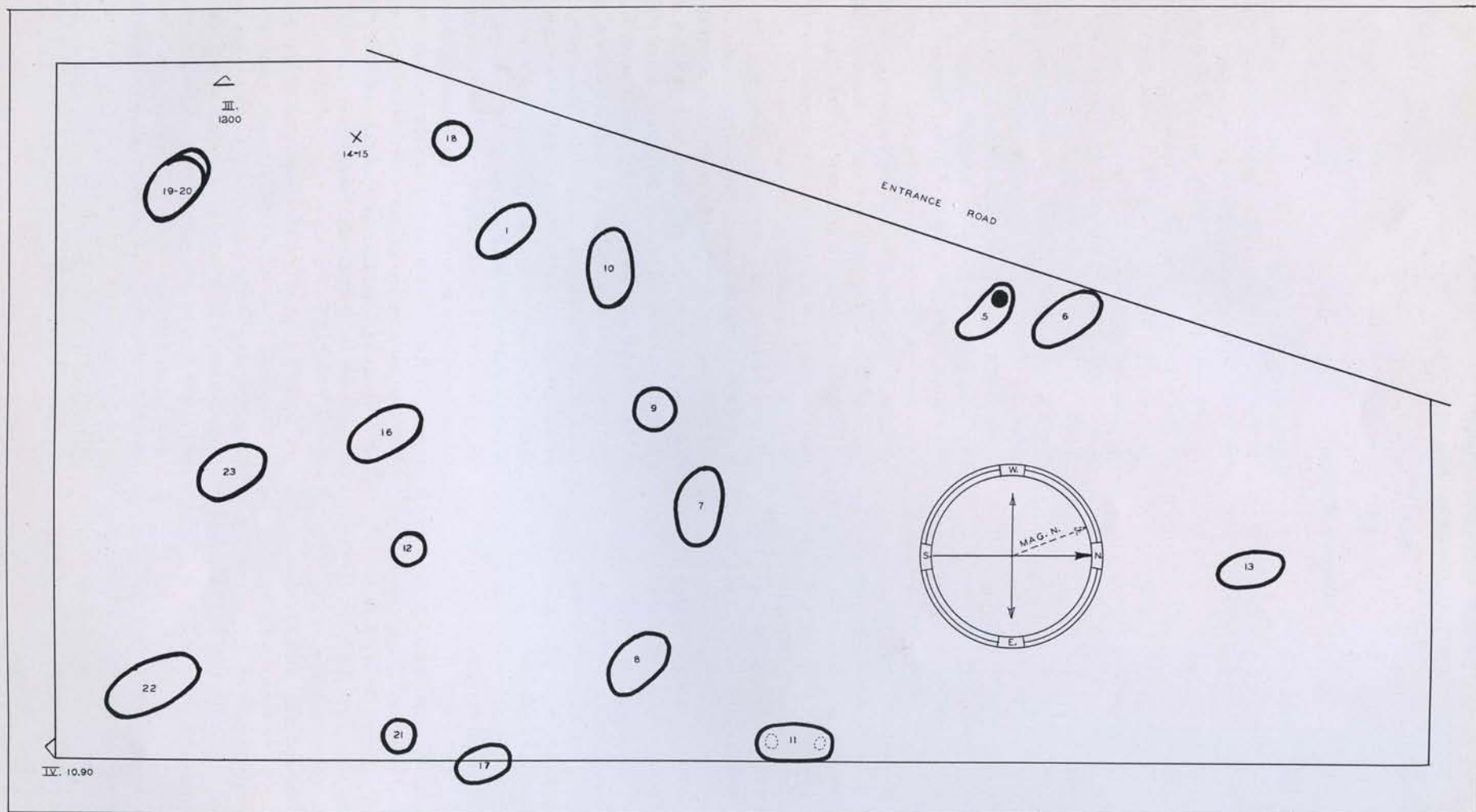


FIGURE 1. Plan of Titicut Burials—Burial #1, Approximate. Burials #14-15 data not available. Burial #4 was directly west of the area shown, and the data is not available.

and a strawberry bed was set out in their place. This bed also disappeared after a time, and the area became part of a large corn field. Upon the destruction of the house and barn by fire, about fifty years ago, the farm was abandoned and the old fields grew up to grass and small white pines. The age of the larger pines seems to attest to the accuracy of the story that cultivation ceased about fifty years ago.

We may assume that this Indian cemetery has been subject to considerable disturbance on the surface and that any low mounds or other indication of the presence of the graves had long since disappeared. The level at which the tops of most of the grave shafts appeared may have been artificially created by cultivation. If there was at any time any indication of where the soil was deposited that was originally removed from the grave shafts, this has been effectively erased. With these facts in mind we may proceed with a description of the burials.

In each instance in which a morphological study of the skeletal material is available, Dr. Hunt's description will follow our general remarks and will be indicated by the inclusion of his reference number for the particular skeleton.

During the excavation of squares A-12 and B-12 in section C, directly west of the cemetery area, the calcined and broken bones of two individuals were found. Although this bone was concentrated in two small areas at a depth of from twenty to thirty-five centimeters, well below the disturbed upper soil, they were not, at the time, recognized as cremation burials. Identifiable bits of cranial fragments and teeth made our identification positive. In the absence of charcoal or burned soil it would seem that the cremation of these individuals must have taken place elsewhere. When it became evident that additional burials were present at the site the numbers 2 and 3 were assigned to these cremations as a means of identification.

Burial #1 appears only on the plan of the cemetery, a profile of this grave is not available. This interment was found in 1935, prior to our work at the site, by members of the Middleboro Archaeological Society. It was excavated by them at that time but no records were taken. The approximate site of this grave was pointed out to us and was re-excavated. The skeleton was found at a depth of about ninety centimeters from the surface, but all positive indications of the original shaft had been obliterated. The skeleton was considerably disturbed and no data of importance could be obtained. Twenty-nine projectile points were recovered from the vicinity of the shaft, but whether or not these were in the original burial deposit could not be

established. These have not been included in this description.

A human burial found west of the wood road by the R. S. Peabody Foundation has been given the number 4. No data from this burial is available to the writer.

A short distance from Burial #4 the grave of a small dog was found. This animal had been buried with care. The shaft was circular in plan with a diameter of eighty-five centimeters. At a depth of one hundred four centimeters the dog had been laid upon its right side, head to the south, feet or paws to the east. The skeleton of this dog is preserved at the R. S. Peabody Foundation.

BURIAL #5:

The kidney shaped outline of this shaft appeared at a depth of five centimeters below the junction of humus and sub-soil. The long axis of the shaft was northeast-southwest. At the north end of the shaft a deposit of charcoal was found, sixty centimeters in diameter and twenty centimeters thick at its center. The earth surrounding this charcoal was burned a deep red indicating that a fire had been made at this point after the grave shaft had been refilled. Slightly lower and north of the charcoal deposit were two flat, worked stones, which may have been digging implements. On the western edge of the shaft, thirty centimeters from its top, was a small lump of graphite. At a depth of one hundred centimeters the shaft suddenly became wider in such a manner as to suggest a partial cave-in while the grave was being dug. The earth from this cave-in had been redeposited on the floor of the shaft at its northern end, creating the irregular profile shown. A tightly flexed skeleton lay upon its right side, head to the southwest, facing east. The hands lay before the face. Resting upon the lower facial bones was a section of woven mat beneath which were two small copper or brass discs with several wisps of hair and a dessicated index finger. The soft parts had been preserved by copper salts. With the exception of the skull and facial bones this skeleton was in poor condition.

N/7201 — This is an incomplete skeleton, with skull, many long bones, and fragmentary hip-bones present, and probably in early adolescence at the time of death. The sex is uncertain. The brain case is gracile and rather narrow, without sutural union. The bone is thin and almost no temporal lines or evidence of nuchal muscle attachments are visible. The mastoids are rather small. These bones look definitely immature. The facial skeleton is virtually complete, but separate from the brain case. Prognathism is present in both mid-facial and maxillary

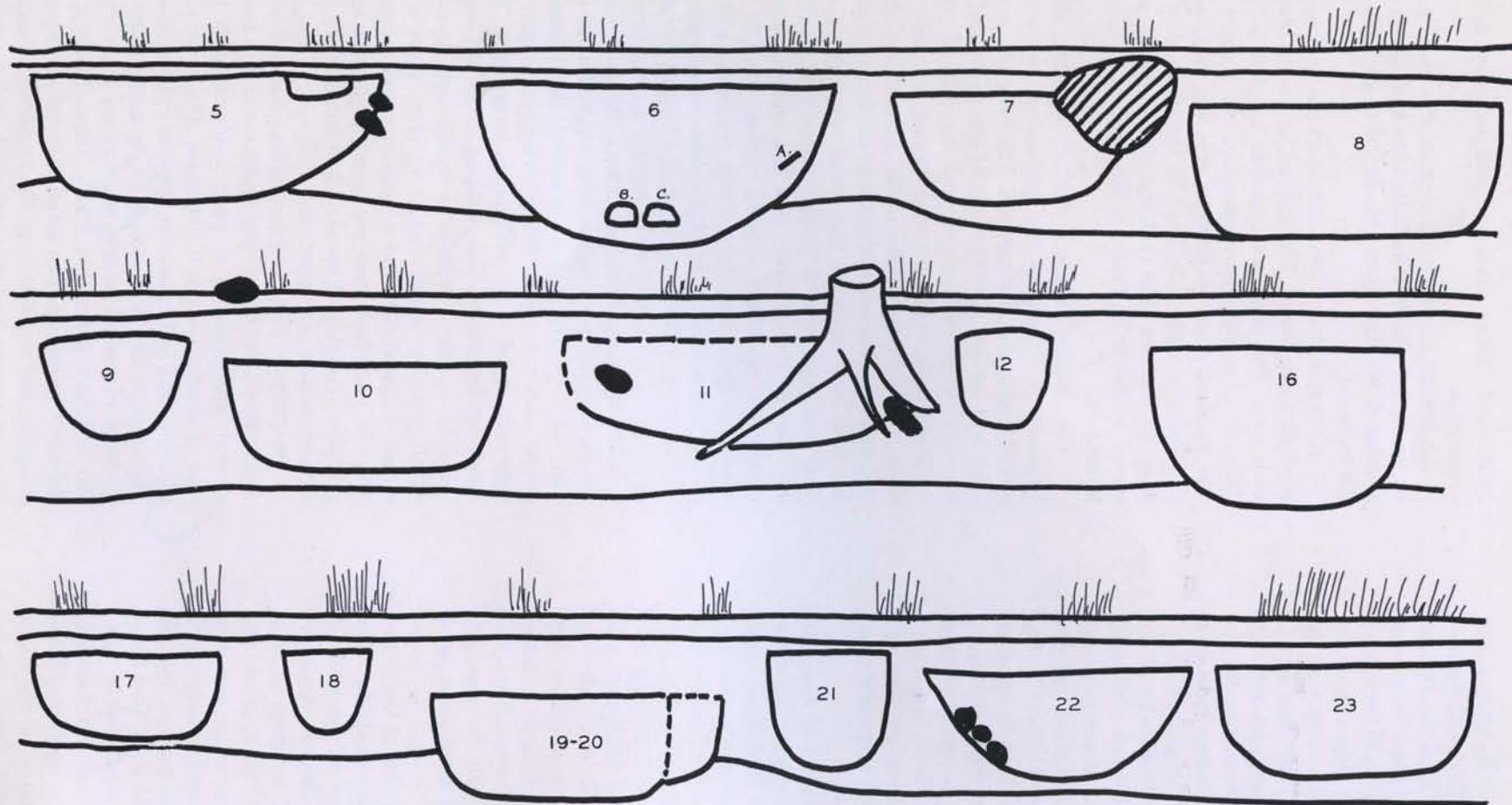


FIGURE 2. Profiles of Titicut burials showing depth from junction of the loam and sub-soil.

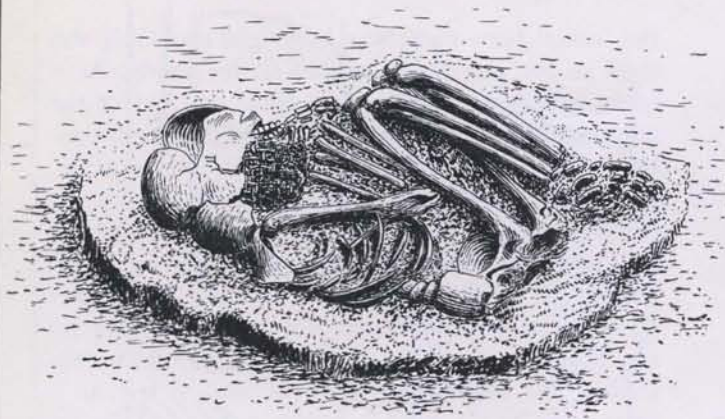
regions. Mid-facial prognathism is rather unusual in American Indians, but maxillary prognathism alone is quite typical. The teeth are unworn and the third molars are all present as unerrupted enamel caps. These traits are indicative of adolescence. The upper incisors are quite large. The right ilium and ischium are partly present. The sacrosiatic notch is a little less than ninety degrees, which indicates a probably male, but preauricular sulcus is present which suggests a female. The epiphyses of the long bones are still separated from the shafts, which is a condition normally prevailing until the late teens. The second molars have erupted, which indicates that this individual was probably more than twelve years old. This then, was an adolescent about fourteen years old, whose sex is uncertain.

BURIAL #6:

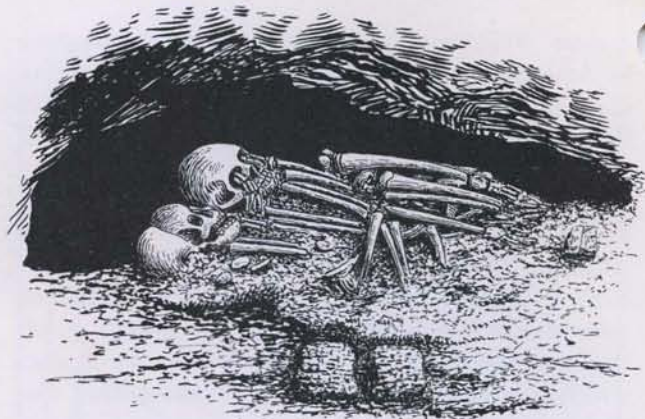
This burial was the most remarkable ever seen by the writer. The outline of the grave shaft, which was visible at a depth of ten centimeters below the junction of humus and sub-soil, was oval in plan, one hundred eighty-five centimeters in length by one hundred twenty-two in width. The long axis was northeast-southwest. The base of the shaft at its center was one hundred fifty-five centimeters from the present surface. The fill consisted of soil so intermixed with powdered charcoal as to appear dark grey in color. Two triangular projectile points were found within the shaft at a depth of five centimeters from the top of the disturbance. These were thought to have been accidentally deposited when refilling the grave. At a depth of ninety centimeters, a rough stone implement, similar to those found in Burial 5, and thought to be a sort of spade, was found. An adult had been placed in this shaft lying upon its back. The lower limbs were tightly flexed so that the patellas of both legs rested upon the sternum, and the bones of the feet lay in disarticulate fashion near the pelvis. The head was to the southwest with the bones of the hands over the face in an extended position. Some of the bones of the small fingers lay within the eye sockets.

To the right or east of the adult skeleton lay that of a young male. The cranium of this smaller skeleton rested directly upon the shoulder of the larger, and the child's body had been placed in a similar position; that is, lying upon its back with the lower limbs drawn up and the hands covering the face. The bones of the feet of the smaller individual lay just to the east of the pelvis of the adult. The condition of these two skeletons was poor with the exception of the larger cranium. A close examination of the smaller cranium disclosed the presence of a small, white quartz projectile point within

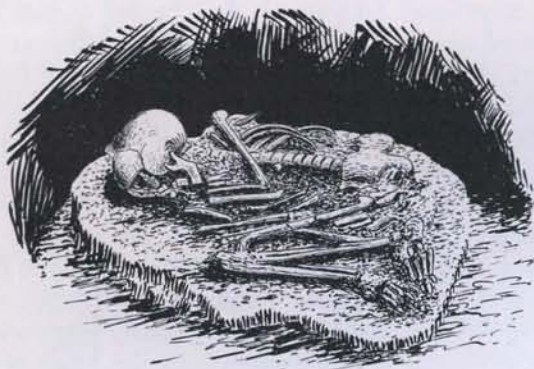
the frontal bone just above the right eye. Only the skull of the adult was submitted for study. At a point twenty-five centimeters from the feet of the adult skeleton lay the remains of a birch bark container. The bark was in a poor state of preservation, in fact it would have probably disintegrated but for the inclusion of several brass or copper objects. The salts from this metal had penetrated and preserved the container to some extent. The object seems to have been a sort of envelope, twenty by ten centimeters in size, folded but not sewn into shape. The illustration must be considered as a restoration of this artifact rather than a representation of the condition in which it was found. The envelope contained a brass or copper pendant (14 by 4 cm.) with a small perforation near the wider end, four small and almost rectangular objects of brass or copper (1.5 cm. in diameter) a cluster of quartz crystals, and several hundred shell and bone beads. A small section of string still existing showed the beads to have been strung in alternating black and white order. A few tubular bone beads were also present. The position of this envelope is indicated at A. in the plan of the shaft. The position of the two bark bundles which were found lying to the east of the two skeletons within the grave shaft are indicated at B. and C. These bundles were very fragile, bundle C was broken and the bowl of a copper spoon protruded. Bundle B. was the better preserved of the two. An attempt was made, however, to preserve both bundles, but we were successful only in the case of Bundle B. Both were sprayed with a hardening solution in situ, but Bundle C. fell apart when moved. The remaining bundle was wrapped in plaster bandage and retained for further study. The broken bundle consisted of a heavy outer wrapping of bark and enclosed a smaller object which had been carefully incased in a mass of fibre. In this fibre were hundreds of small seeds later identified as from the milk-weed plant. The inner object was a bundle wrapped in deer skin about which had been wound several strings of brass or copper tubular beads. These metallic beads had been strung on a twist of three strands and between each pair of metal beads a drilled seed had been placed. Within the skin bundle were the bones of the lower portion of an infant. Upon opening Bundle B. a similar enclosure was found, except that this bundle contained the upper portion of the skeleton of an infant. The strings of beads in this bundle did not include seed beads. Eight copper or brass discs, a copper or brass pendant, and two triangular copper or brass projectile points had been included in this bundle,



5.



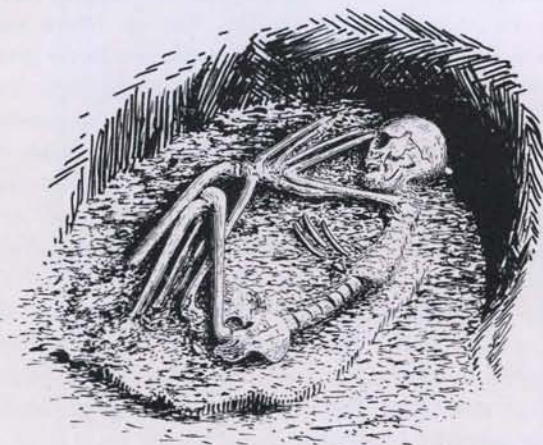
6.



7.



8.



10.



11.



18.

TITICUT BURIALS



13.



17.



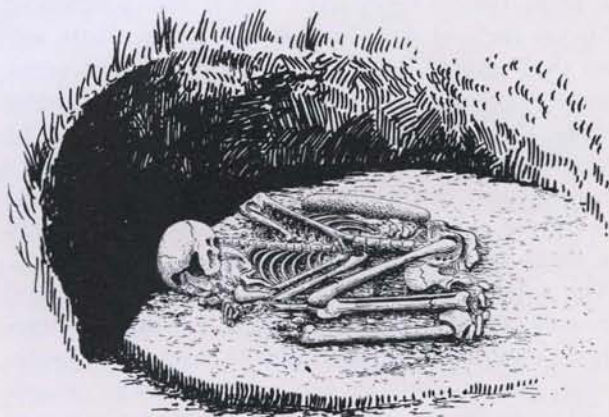
16.



23.



19-20.



22.

TITICUT BURIALS

SOME INDIAN BURIALS FROM SOUTHEASTERN MASSACHUSETTS

placed within the fibre mass about the inner container.

N/7198 — This is a well preserved cranium except for the occiput immediately posterior and lateral to the foramen magnum. The cartilaginous junction between the sphenoid and the basioccipital is still present, and the third molars, all of which are visible, are still unerupted. The age is therefore late adolescent or subadult. The diagnosis of sex is uncertain. The brow ridges are small, the forehead is somewhat rounded anteriorly, and the nuchal muscle attachments fairly gracile. These traits are relatively female. On the other hand, the teeth are fairly large, the mastoids medium, and the zygomatic arch extends over the external auditory meatus with fairly substantial muscle markings. These are relatively masculine traits. The zygomatic arches are not visible when the cranium is seen from above, and the head in life was clearly brachycephalic. The cranial index is 87.5%.

N/7194 — This is the fragmented skeleton of a fetus or new born child. The extensively crushed facial skeleton reveals a full complement of unerupted milk teeth. Near the fragments of the skull are apparently small pieces of skin and short black hair, presumably head hair. (Dr. Hunt was not aware of the association between this fetal infant and the skeleton described as N/7198 otherwise he might have been more definite concerning the sex of the sub-adult.)

BURIAL #7:

The top of the shaft of Burial #7 appeared at a point twelve centimeters below the junction of humus and sub-soil. The outline of the shaft was an oval approximately one hundred eighty centimeters long by one hundred twelve centimeters wide. The long axis was a bit south of east-west. The northeastern end of the shaft, near its top, had been considerably disturbed so that an accurate outline of the top of the grave could not be determined until a depth of seventy centimeters had been reached. The total depth of this grave was one hundred twenty centimeters. The skeleton was tightly flexed, lying upon its right side, head to the west or southwest, and face to the north. The skeleton was in extremely fragile condition and was not removed for study. The comparative size of the bones, the type of pelvis, and indications of strong muscular attachments, particularly in the region of the arms and shoulders, suggest the male sex. The lower mandible had atrophied to a considerable degree. The molars had been lost in life and the process completely healed. The cranial sutures were almost completely obliterated externally. Indications of a

severe arthritic condition were noticeable, especially in the spinal column. It is safe to assume that this was the skeleton of an old male. A small triangular projectile point was found lodged in the lower spine in such a position that it must have penetrated the body from the lower front and severed the spinal cord.

BURIALS #8 and #8A:

At a depth of ten centimeters from the junction of humus and sub-soil the top of this grave shaft appeared. It was roughly oval in shape, one hundred seventy centimeters long by one hundred centimeters wide, the long axis being in a northeast-southwest direction. The greatest depth was one hundred thirty centimeters from the present surface, on white sand. The skeleton was in a loosely flexed position with the head to the southwest, facing east, and lying upon its right side. Three of the vertebrae were missing. The bones of the hands lay in front of the face. The skeleton, which was in excellent condition, seemed to be that of a young male. All the teeth were present and unworn. A slight discoloration of the soil on the west side of the shaft led to the discovery of the skeleton of an infant which had been deposited upon a shelf dug into the side of the grave shaft at a level slightly above that of the adult skeleton. This small skeleton lay upon its back with the face turned upward. It was in extremely fragile condition. Three vertebrae which were missing from the adult skeleton were found intermixed with the bones of the infant.

The sketch which accompanies this description was made prior to the discovery of the second skeleton. Having exposed both skeletons to our satisfaction they were covered with canvas to protect them from the hot sun while we took a few moments out for lunch. Before our return a visitor entered the excavation, using the shelf upon which lay the skeleton of the infant as a convenient step. Needless to say, upon our return, we found both skeletons reduced to fragments of bone. Only the facial bones of the adult were retained for study. No grave goods were present in this grave.

N/7200 — This is the facial skeleton of a young male with moderately developed browridges, no sutural union in the orbits, and all teeth present at death. The third molar and the left upper central incisor were lost post mortem. Dental wear is not yet marked in the second molars, but slight dentine exposures are seen in the left second premolar and the first molar, and the occlusal edges of the incisors are worn to the dentine. These incisors are slightly shoveled. The lower incisors are small. The third molars are almost unworn. The nasal profile shows

a clear depression below nasion. The nasal sill is still well demarcated. The mandible is in good condition except for loss, after death, of the right condyloid process. The body of this bone is quite rugged with a prominent chin. A moderate torus occurs. The symphysis is quite deep.

BURIAL #9:

The top of this grave appeared as a rough circle, one hundred five centimeters in diameter, at a depth of ten centimeters from the junction of humus and sub-soil. A large flat stone lay nearly in the center of the disturbance, and the top of the shaft was slightly convex. In cross-section the shaft had a tendency to be conical with a base diameter of thirty-eight centimeters at a depth of one hundred centimeters from the present surface. Within the shaft lay the skeleton of an infant or a small child. It had been placed upon its back with the head to the south facing east. The lower limbs were folded in characteristic infant fashion while the arms appeared to have been folded across the chest. No grave goods were present. As this skeleton was very fragile it was not removed.

BURIAL #10:

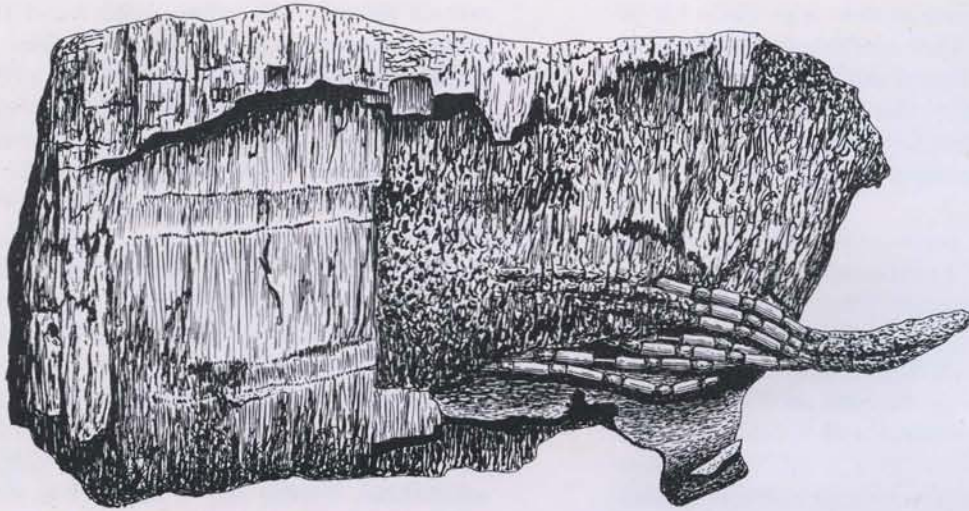
The top of the shaft of this burial did not appear until nearly thirty centimeters of soil had been removed. A more recent disturbance near the surface, greater in size than the shaft, together with the depth of one hundred twenty centimeters from the present surface to the bottom of the grave shaft, leads to the belief that the original top of the shaft was much nearer to the junction of humus and sub-soil than our notes indicate. The outline was oval, two hundred centimeters in length and one hundred twenty centimeters wide, the long axis being nearly due east and west. The skeleton of a robust male lay on its right side, loosely flexed, with the head to the west facing south. Most of the rib cage had disintegrated and the small bones of the hands, which had rested before the face, were reduced to powder. A small, stemmed projectile point was found imbedded in the cranium so that almost ten millimeters of the point was exposed within the cranial cavity.

N/7205 — An incomplete male skeleton with a probable age at death of more than fifty years (late middle or early old age.) The skull is fragmentary with a considerable destruction of the right facial bones. Sutural union has begun externally in the sagittal and lambdoid sutures. This individual was probably dolichocephalic. The nuchal muscular attachments were quite prominent, with a slight occipital torus. The mastoids are fairly large. Fragments of the left side of the face, palate, and mandible

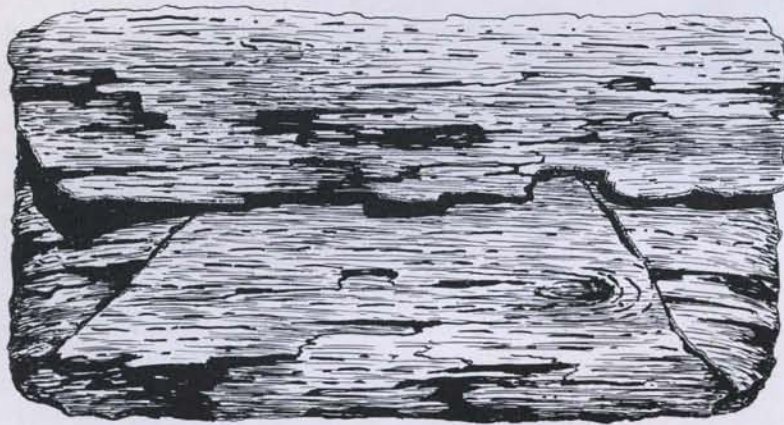
reveals that the left upper molars and the second premolars were lost before death, but the front teeth were present in death. The roots of the front teeth were considerably out of line, so that he probably had a considerable anterior malocclusion. A large palatine torus was present. The left lower second premolar was lost before death. Wear on the entire tooth row has exposed dentine everywhere except on the left lower third molar. The left half of the mandible is quite rugged with a slight mandibular torus and a wide ascending ramus. The lower incisors are small. The sternum shows both fusions and perforation. Marginal arthritic exostoses occur on the vertebrae and at the sacroiliac articulation. The glenoid fossa of the left scapular fragment shows lipping except adjacent to the bicipital tuberosity. The innominates show male features, large acetabula, convergent ischiatic spines, narrow sacrosciatic notches, and unverted pubic rami. No preauricular sulci are present. The symphysis is absent. Stature from the length of the left femur and tibia is estimated to be about one hundred sixty-seven centimeters (about 5 feet 6 inches.)

BURIAL #11:

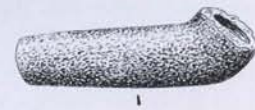
The presence of a large white pine at the southern end of this grave together with a recent disturbance involving the rest of the top of the shaft prevented an accurate determination of the location of the upper portion of this shaft. From the location of the bottom of the shaft, at ninety centimeters from the present surface, it would seem that the top must have been at average depth (ten centimeters below the junction of humus and sub-soil.) The upper portion of this shaft has been represented by dotted lines to indicate this lack of precise information. At a point forty centimeters below the junction of humus and sub-soil two large flat stones were encountered; one at the northern end of the shaft and the other at its southern end between the roots of the pine tree. Beneath each of these stones was a deposit of red oxide of iron (red paint). The skeleton of a middle-aged male lay upon its back with the head toward the south facing upward. The arms had been flexed at the elbows so that the bones of the hands lay on either side of the skull. The legs also had been drawn up and the patellas lay on either side of the pelvis. The bones were in an advanced state of disintegration. A quantity of red paint, perhaps several quarts, had been deposited upon the floor of the grave prior to placing the body within. The earth was stained to a depth of fifty centimeters below the bottom of the shaft by this oxide. At a point eighteen centimeters to the west of the cranium, at a depth of ninety centimeters from



1.



2.



1

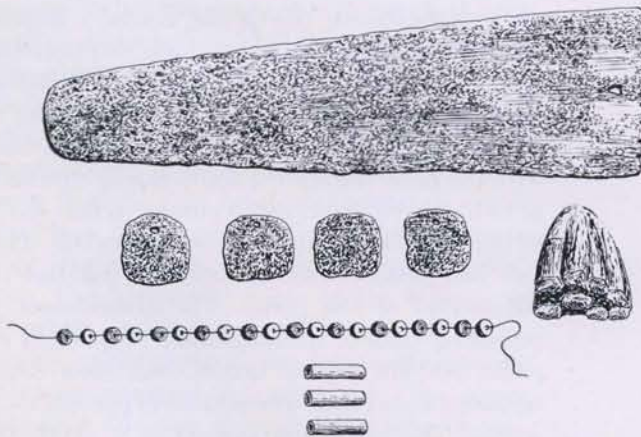


2



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4.



3.



5.

the surface, lay a large triangular projectile point in a small deposit of red paint.

N/7196 — This is the skeleton of a male in early middle age, most of whose bones are in large fragments. The facial skeleton is relatively complete, but crushed flat. Median brow ridges, massive malars, and large teeth confirm it to have been a male with rugged masticatory muscles. Wear on the teeth has exposed the dentine in all of them. The upper molars are absent, but whether this is a result of loss or failure to develop is uncertain. The incisor bearing portion of the mandible is missing. Caries occur on the right lower second molar, and the first was lost before death. This is a very powerful mandible, with unusually broad ascending rami. The cranial fragments show little sutural union, which indicates that early middle age had probably not been reached. The mastoids are large and strong. Of the long bones, the left femur is best preserved. It is four hundred forty-nine millimeters long. The Pearson interracial formula (Up From The Ape.) gives a stature of one hundred sixty-six centimeters. (5 feet 5½ inches) The bones of the lower limbs are relatively gracile, with virtually no development of the linea aspera on the femur. The left ulna, however, is somewhat more rugged. An interesting pathological condition in this individual is an ostetitus at the distal end of the right femur near the linea aspera, and proximally and medially on the right tibia. This condition is shown by a bulging on the surface of these bones and a thickening of the cortex.

BURIAL #12:

This grave was at first thought to be a simple hearth, as a deposit of charcoal containing shattered stones covered the top of the shaft at a point fifteen centimeters below the junction of humus and sub-soil. Removal of this charcoal revealed the circular top of the grave shaft with a diameter of seventy centimeters. The shaft was ninety centimeters deep from the present surface. The skeleton of an infant was found in such a position that it appeared to have been dropped into its grave, feet

first. The bones were in an advanced state of disintegration and we did not remove them. No grave goods were present.

BURIAL #13:

This burial was partially excavated and covered with canvas preparatory to a complete exposure on the following day. During the early evening hours the skeleton, which was in good condition, was removed by some person unknown to us. Our incomplete records show that the skeleton was flexed on its right side, head to the southwest, facing east. Of the shaft we know only that its top was at a depth of ten centimeters from the junction of humus and sub-soil and that it was oval in shape. It is included in FIG. 4 to show the peculiar arrangement of flat stones on the eastern side of the grave.

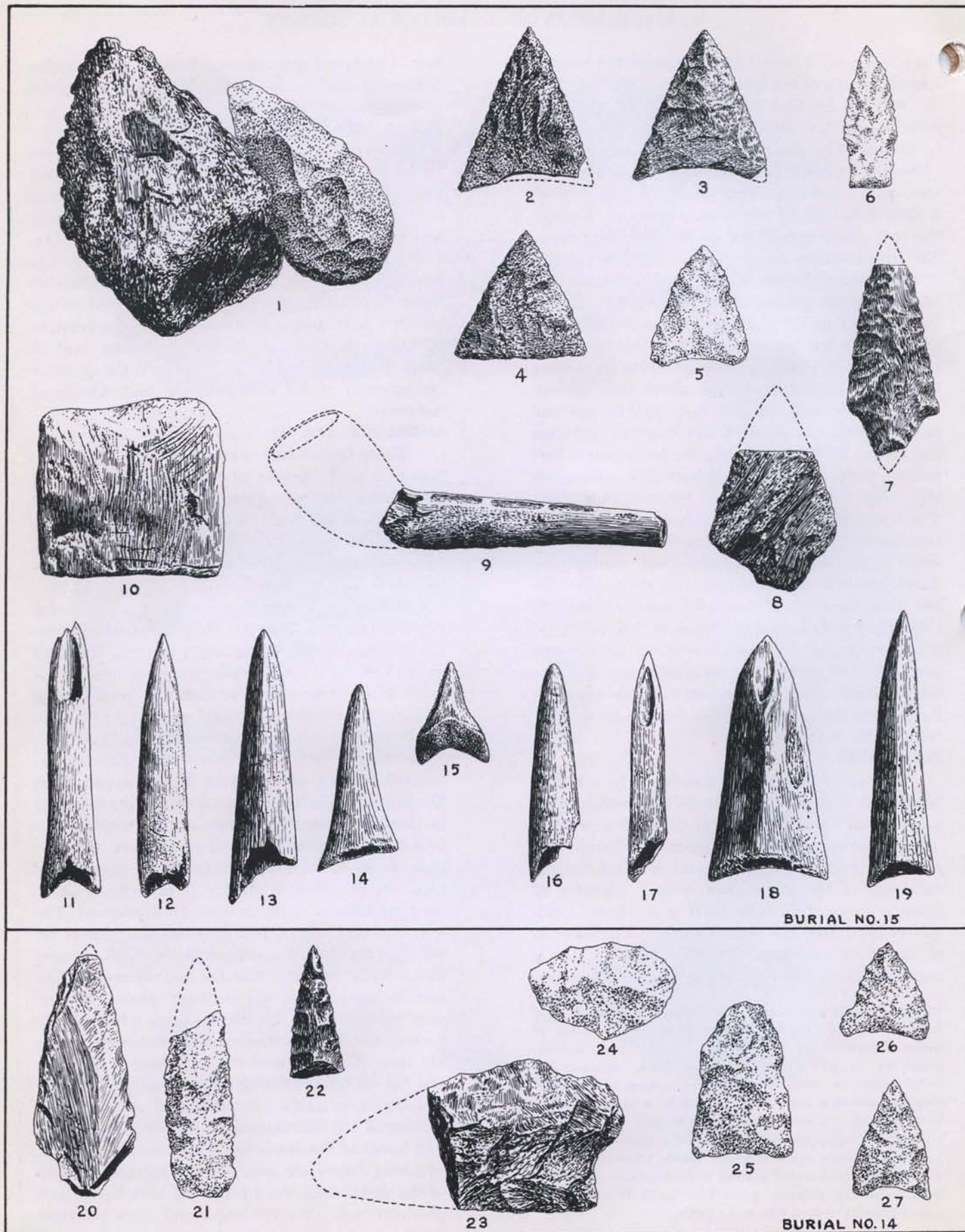
BURIAL #14 - 14A - 15:

These burials were excavated under the direction of a staff member of the Robert S. Peabody Foundation. Except for the illustration of the grave goods found, the data is not available to the writer. The skeleton from Burial #15 however, was among those examined by Dr. Hunt whose description follows—

N/7202 — This is an incomplete skeleton of a middle-aged man. The right third of the facial skeleton and most of the brain case is present. The skull is 189 mm. long and 129 mm. wide with a cranial index of 67.9% or dolichocrane. The vault is long and ovoid, with both internal and external union of the sagittal suture almost complete. The upper right second and third molars are present and somewhat worn, with a slight dentine exposure on the second premolar. The nasal profile is interesting in that no depression is seen on the nasion. This trait is not unusual in American Indians. The scapula shows an absence of lipping on the glenoid fossa, which indicates the age of the man at death may not have been much over 35 or 40 years. The left innominate bone is fairly complete except for the superior ramus and symphysis of the pubic. The inferior ramus is massive and unerected. The acetabulum is large, the ischiatic spine is convergent medially, and the sacrosiatic notch forms an acute angle. These are all male characteristics of the hip bone. The length of the left femur is 446 mm. and the left tibia is 379 mm. Formula C of the Pearson interracial male calculations of stature yields a value of 167 centimeters (5 feet 6½ inches). The long bones of the lower limbs are relatively gracile, squatting facets are seen on the anterior margins of the distal auricular surfaces of both tibia, their proximal ends are retroverted, and show platycne-

FIGURE 5. Grave goods from Titicut burials. 1. Bundle B. from Burial #6 (12.5 X 23 CM.) consisting of an inner container of leather, wrapped about a portion of an infant skeleton, bound by strings of tubular copper beads separated by drilled seeds, the whole surrounded by a layer of milk-weed fibre and shredded cedar bark. The whole wrapped in heavy bark. 2. Birch bark receptacle A. (10 X 20 CM.) 3. Contents of Container A. Copper pendant (14 X 4 CM.), copper Discs (about 1.5 CM. in diameter) cluster of quartz crystals, a few of the beads of which there were several hundred in the container. 4. Stem of steatite pipe and projectile points from Burial 17. 5. Peculiar shaped fragment of stone from Burial #18.

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nia. These traits indicated a frequent habit of squatting during life, but not necessarily strong leg muscles. The humeri and ulnae, however, are more rugged, and indicate strong arm muscles.

BURIAL #16:

This large grave shaft was encountered at a depth of twenty centimeters below the junction of humus and sub-soil. It was oval in shape, one hundred ninety centimeters long by one hundred twenty centimeters wide, the base of the shaft was at one hundred fifty centimeters from the present surface. The long axis of the grave was northeast-southwest. The skeletons of two individuals were found within the shaft. Burial A was tightly flexed and lying on its left side, head to the north. The skull had been rotated in such a manner that it appeared to face upward. The facial bones were detached and intermixed with the ribs and pelvis. It would seem that this skeleton had been disturbed at the time of the second burial. Some of the bones from skeleton A were discolored by red paint but, as there seemed to be little of this paint in the soil beneath the skeleton, it is assumed that this was an accidental staining which occurred at the time of the second burial. Burial B was loosely flexed, lying upon its right side with the head to the southwest facing east. The hands lay before the face. The earth beneath this skeleton was heavily impregnated with red paint but there was little upon the bones. A triangular projectile point lay beneath the left humerus of this skeleton. The west wall of the shaft was stained red and several fragments of bark indicated that the shaft had been lined with that material.

N/7197 — These are the highly fragmented and unusually fragile and gracile skeletons of two young women. The vertebrae of one of the women are well preserved and show some lipping of the upper surfaces of the centra, suggesting that at least one of these individuals was over thirty years of age at the time of death. One left ulna had sustained a fracture in life.

BURIAL #17:

The top of this grave was oval in shape and was found at a depth of ten centimeters from the junction of humus and sub-soil. The shaft was one hundred thirty centimeters long by one hundred centimeters wide and had penetrated to a depth of one hundred thirty-four centimeters from the pres-

ent surface. Its long axis was northeast-southwest. Approximately in the center of the shaft was a recent disturbance forty centimeters in diameter and fifteen centimeters in depth. This probably represents the location of a small tree as rotted bark and wood were present. The skeleton within this shaft was loosely flexed, lying on its right side, with the head to the southwest facing east. The hands lay in front of the face. There had been an abrupt displacement of the vertebrae at the seventh lumbar and the skull was broken apart at the sutures. Beneath the skull was the stem of a steatite pipe, and a small, stemmed, white quartz point, triangular in shape, was found within the pelvis near the left iliac.

N/7203 — This is a fairly complete skeleton, probably a man in early middle age. The brain case is fairly rugged, with powerful neck muscles, as shown in its occipital torus. The vault is fairly thick, but with mastoids of only moderate size. Most of the cranial bones are separated at the sutures. A small part of the frontal bones just anterior to the coronal suture was probably separated by a remnant of metopic suture. Slight sutural union has occurred in the orbital floor, an indication of probably early middle age at death. The teeth are large, and wear is greatest at the incisors. Peculiar unworn spurs of enamel occur on the lingual occlusal surfaces of both lower first molars. The upper left canine tooth is worn down to the plane of the incisors. The mandible is fairly rugged, with large abutator foramina, rugged ischia, and narrow subpubic arch. The surface of the right pubic bone at the symphysis is at a smooth stage typical of early middle age (39-40 years), with a clearly defined margin. A similar age is indicated by a slight lipping of the glenoid fossa of the scapula. A reconstruction of the stature by Pearson's male formula (e) femure and tibia, yields a stature of one hundred sixty-eight centimeters (5 feet 6 inches). The right femoral shaft shows a probable periostitis in its proximal third on the medial side. The cortex of the bone is thickened and bulging.

BURIAL #18:

The top of this shaft was located at the junction of humus and sub-soil. It was circular in plan, ninety-seven centimeters in diameter, and the bottom of the shaft was at one hundred centimeters from the present surface. Within the shaft the body of a child had been placed, lying upon its back with the head to the southwest. The skull was so broken by pressure that there was no indication of the direction in which it had faced. The legs were

FIGURE 6. Grave goods from Burials #14 and #15 — 1. Fire-Making set, 2-8, various types of stone projectile points. 9 — stem of clay pipe badly corroded by contact with fire-making set. 10 — fragment of polished steatite of unknown use. 11-14, and 16-19 — bone projectile points. 15 — shark tooth. 20-27 — various types of stone projectile points.

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slightly flexed and the arms lay to the east of the skeleton. The bones of both the hands and feet had completely disintegrated. To the east of the pelvis was an object similar in shape to an atlatl weight (Fig. 3).

N/7193 — This is the skeleton of a young child whose sex is uncertain. The skull is in pieces, mainly separated at the sutures, and the metopic suture may have been present in life—a normal occurrence in infants and young children less than three years old. The teeth permit a fairly precise diagnosis of the child's age. They are present in fragments of the maxilla and mandible. All of the milk dentition had emerged except the four second milk molars. Since these molars emerge at twenty-four months, the probable age of this child is about twenty months. The enamel caps are well formed on the permanent first molars. The maxillary sinus is probably unusually large for a child of this age. The exoccipitals were probably separated from the squama in life. The mandible is quite rugged, and there is already a slight suggestion of mandibular torus. Many shafts of the long bones are present, and perhaps 1/3 of adult size.

BURIALS #19 - #20:

The point at which the tops of these two shafts were distinguishable was somewhat lower than that of the rest of the Titicut burials, at twenty-seven centimeters below the junction of humus and sub-soil. The base of these shafts was also deeper, at one hundred eighty-five centimeters from the present surface. It is possible that these graves were located in a depression in the original surface which had since been filled through cultivation of the surface. The top of this combination of shafts was a long oval two hundred twenty-four centimeters by one hundred thirty centimeters, the long axis was northeast-southwest. We became aware of the fact that this was a combination of two shafts only when the slight difference in the level of the two bottoms was noticed. The presence of a disarranged skeleton as well as an undisturbed skeleton served to confirm this fact. It would appear that when the second grave shaft was excavated the presence of a previous burial was discovered and the original skeleton simply pushed aside to make room for the second burial. One might assume from this circumstance that the graves were not marked, or that if such marks were present they were of a temporary nature, so that the precise location of burials were soon forgotten by the Indians. The complete skeleton was found flexed upon its right side, head to the southwest, facing east, with the hands before the face. The skeleton was in poor condition and was

left in situ. No grave goods were present. The only clue to the age of this individual at death was that the epiphyses of the long bones were still separate from the shafts, a condition normal in the late teens. The remains of the first burial lay just to the west of the pelvis of the second, and consisted only of a cranial cap, a sternum, pelvis, and one or two of the long bones. These also were left in situ.

BURIAL #21:

The top of this shaft was almost a perfect circle, ninety centimeters in diameter, located at the junction of humus and sub-soil. The base of the shaft was at ninety centimeters below the present surface. The skeleton of an infant or a small child lay on its back with the head to the southwest, its lower limbs folded in characteristic infant fashion. As it lay the skeleton was fifty centimeters in length. No grave goods were present. This skeleton also was left in situ.

BURIAL #22:

This grave shaft appeared at a depth of fifteen centimeters below the junction of humus and sub-soil. The plan was oval, and was orientated in a northeast-southwest line. Its length was two hundred forty-nine centimeters, and its width one hundred twenty-seven centimeters. The greatest depth was at its center, where the shaft had penetrated to the white sand at one hundred twenty-seven centimeters below the present surface. The grave fill was dark in color, probably because of the inclusion of considerable powdered charcoal. There were several lenses of light gravel; and, at the north end of the shaft, about half way from the top, were three large cobble stones which showed the effect of intense heat. The skeleton was tightly flexed and lay upon its right side with the head to the southwest, facing east. The hands lay before the face. Back of and parallel to the spinal column was a large, well-made cylindrical pestle. The skull was broken apart at the several sutures, it was bandaged in situ in order that it might be removed whole.

N/7199 — This is a partially restored cranium with bone fragments of the facial skeleton and skull base, and with the mandible complete except for both condyloid processes. The individual was mesocephalic. The smooth contour of the posterior part of the zygomatic arch suggests that the individual was a female, but the mastoids are fairly large for a female. Sutural union both inside and outside the vault is absent. The teeth of the maxilla and the mandible are worn enough to expose the dentine. All of the mandible molars were probably lost before death, and the alveoli resorbed. The right maxillary first molar has erupted considerably

rather than the adjacent highly worn second premolar, and this molar is markedly carious. A loose right maxillary third molar has almost a crown eroded away by caries, but no abscess formation is present. A small occlusal and lingual carious lesion is seen on the right upper incisor. This, then, was probably a young woman with unusually bad teeth for her age and racial origin.

BURIAL #23:

Again we find an oval grave shaft one hundred seventy-five centimeters in length by one hundred twenty-seven centimeters in width, with its long axis in a northeast-southwest line. The base of this grave shaft was at one hundred twenty-five centimeters from the present surface, and its top ten centimeters below the junction of humus and sub-soil. The fill was light grey in color and consisted of very fine sand mixed with powdered charcoal. It was quite evident that the earth removed in digging had been discarded, and a quantity of fine sand had been brought from another source for fill. The skeleton was loosely flexed upon its right side, head to the southwest facing east. Upon the uppermost portion of the skull there still remained a fragment of bark, indicating that the body had been protected by a covering of that material. The bones of the left foot and ankle were missing. Among the bones of the pelvis, which was in very poor condition, were the fragile bones of a fetal infant. This burial seems to have been made with special care. The body had been wrapped in bark to protect it from the soil, and the rather heavy gravel removed from the grave was replaced by a quantity of fine white sand brought from some other source. We removed only the cranium from this burial.

N/7206 — This is the skull of a woman who probably died in middle age. The calvarium is well preserved except for breakage of both zygomatic arches. The vault is dolichocrane (Cranial Index 72.4%), with an ovoid shape, and only a moderate bowing of the zygomatic arches. The nasal profile is virtually flat from the glabella to well below the nasion, and markedly concave. Moderate maxillary alveolar prognathion is present. The mandible is small and gracile with a slight suggestion of mandibular torus. The teeth are worn considerably in the incisor region, but less posteriorly. Both lower first molars were lost a short time before death, and the alveoli are resorbed; but convergence of the adjacent teeth has hardly begun. The incisors, especially the lower ones, are very small.

CONCLUSIONS

It is possible to arrive at several interesting conclusions from the data obtained from the excava-

tion of the burials at Titicut. The vertical and horizontal plan of the grave shafts, the position in which the bodies were placed, the care with which the dead were laid away, and the grave goods which were found with some of them, all contribute to our knowledge. The morphological study of the skeletons also makes no small contribution to our knowledge of the physical type and habits of the Titicut Indians.

In view of the respectable antiquity of some of the lithic materials found elsewhere at the site our first problem is to establish the probable age of these burials. Upon the basis of data, reported later in this paper, and obtained at the site at Assawompsett Lake, the cremation burials (#2 and #3) are probably from an archaic period and ante-date the inhumations.

The profiles of the balance of the grave shafts clearly establish the fact that they were all dug from a common surface. A possible exception is Burial #19-20. The slight difference in the depth of the tops of the shafts from the junction of humus and sub-soil may be assumed to be a function of erosion and recent disturbance. Of course the original surface of the area was probably an uneven one, and recent cultivation would tend to plane off the tops of the grave shafts and level the entire area. It is somewhat difficult to explain the position of the tops of shafts #18 and #21. In no instance was there any indication of where the earth removed from the original shafts was placed prior to refilling. This fact also tends to indicate that cultivation has planed off the tops of some of the graves and thus destroyed some of the data. The slightly greater depth at which the tops of burials #19 and #20 were found may be explained by assuming that these shafts were located in a depression in the original surface. It is also possible that these were the earliest interments, but there is no direct evidence of greater age. If we assume that all of these burials were made by one of the Indian groups that lived at Titicut, and that they were contemporary within reasonable limits, the character of some of the artifacts found in a few of the graves may be submitted as evidence of the probable age of all.

Artifacts of undoubted European origin were associated with some of the burials. Projectile points, pendants, and beads of copper or brass were taken from Burials #5 and #6. The stem of a European clay pipe was associated with the stone and bone projectile points in Burial #15. The presence in Burial #6 of such perishable materials as birch bark and bundles containing deer skin is an indication of no great antiquity. The presence of

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these materials indicates that these burials were made after European contact. It is probable on the basis of historical evidence that Titicut was abandoned by the Indians prior to 1621, so that we may guess that most of these burials were made between 1500 and 1620 A.D. The fact that red paint was present in some of these graves is no longer considered to be, in itself, evidence of antiquity, as it has been amply demonstrated that this material was used by some historic groups.

The plan of the Titicut burials also reveals an interesting trait that was probably a part of the mortuary complex. It will be noted that all of the oval shafts, with the exception of Burial #10 and Burial #7, were orientated along a northeast-southwest line. A majority of the skeletons were flexed, were upon the right side, head to the southwest, and facing east. Even those which rested upon their backs were placed with the head toward the southwest. The exceptions, Burial #10, and Burial #7, which were definitely orientated in an east-west line, serve to emphasize the rule.

We may sum up the burial complex at Titicut during the proto-historic period as follows — Orientation of the grave shaft along a northeast-southwest line, body placed upon the right side, flexed, head to the southwest facing east, with the hands before the face. An alternative position occurred in which the body was placed upon its back with the head to the southwest and hands covering the face. Respect for the dead and a desire to protect the body from the elements is shown in several instances in which a bark covering is present, and the substitution of fine white sand for gravel in Burial #23. We must not omit reference to the dog burial found near Burial #4. This burial resembled those of several infants found, in that the plan of the shaft was round, had a diameter of ninety centimeters and a depth of one hundred centimeters. The body of the dog had been placed upon its right side with the head to the south in a manner similar to that of the humans buried at the site.

MORPHOLOGICAL CONCLUSIONS

BY DR. EDWARD E. HUNT JR.

The Indian skeletons excavated from the Titicut site comprise the remains of about fifteen individuals (this is the number sent to Dr. Hunt for examination), distributed by age and sex as follows:

| AGE | SEX | | |
|--------------------------|------|--------|-----------|
| | MALE | FEMALE | UNCERTAIN |
| Young child | — | — | 2 |
| Adolescent | — | — | 1 |
| Subadult (18-20 yrs.) .. | — | — | 1 |
| Young Adult | | | |
| (21 to 35 yrs.) | 1 | 3 | 0 |
| Middle Aged | | | |
| (36 to 55 yrs.) | 5 | 1 | 1 |
| | 6 | 4 | 5 |

The individuals in the series above are described morphologically in the text. This series of skeletons is large enough so that the characteristics of the Titicut Indians can be reconstructed from their bones. The Titicut population shows a quite typical aggregate of Indian racial traits. The headform is highly variable, ranging into extremes both dolichocephalic and brachycephalic. The average male stature was medium (probably 165 - 170 cm.). Typical North American Indian racial features found in some of the skeletons include a lack of depression at naision, broad malars, maxillary alveolar prognathism, palatal and mandibular tori, shoveling of the upper incisors, small lower incisors, and rugged attachments of both jaw and neck muscles.

Some conclusions as to the habits and behavior of these Indians may be deduced from their teeth, the shapes of the long bones, and the ruggedness of some of the muscle attachments.

The teeth show rapid wear from early adult life on in most individuals. The dietry of these peoples was clearly abrasive, and wore down the front teeth in particular. Some individuals show dental decay and loss in middle life. Peridental disturbances, however, are not too conspicuous. The long bones in this population are especially revealing of their mode of life. By and large, the muscular attachments of the upper limbs are strong and those of the lower extremities are weaker. This is the kind of musculature to be expected in a people who prefer to travel by boat rather than on foot. Some evidence also exists—in one man especially—of a preference for squatting rather than sitting, and a bent knee shuffle rather than a walk, with the knee extended. These findings are characteristic of human beings outside our urban sphere of life. Finally, pathological disturbances of the leg bones in at least two individuals may have encouraged their owners to walk as little as possible.

Table 1. finally illustrates two demographic characteristics of mortality often found in primitive or rustic populations. One is the high frequency of deaths before middle age. The second peculiarity is the high incidence of female deaths in the young adult, or reproductive span. These findings emphasize the hazards of primitive life, especially to young women as a result of childbirth.

EDITORIAL COMMENT

Our 20th Anniversary program has been set for April 11th at the Museum of Natural History in Worcester, Mass. Able Publicity Chairman, Janet Wilder, has prepared the groundwork for this anniversary meeting; and the Program Committee, headed by Walter Vosberg, will provide excellent speakers for the occasion.

The Museum will display many exhibits of interest to members and their guests, and special honor will be paid all Charter Members able to attend.

This meeting merits a record breaking attendance as no effort is being spared in providing the proper background for a suitable commemoration of this important anniversary.

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Of interest to members is the information that, come spring, the Governors of Plimoth Plantation have approved the erection of a small Indian village on a site adjacent to the final mooring place of the Mayflower replica. Authentic plans are now being completed for three or four houses, which will enclose the contemporary furnishings. Several of our Society members are active on the Board of Advisors, acting as consultants on various phases of proto-historic research.

Frederick J. Pohl, student of the Vinland voyages, has pinpointed an area in Nova Scotia which he feels holds great promise in archaeological research. The indicated site does not concern the Norsemen, but has to do with the voyage of exploration of Henry Sinclair, Earl of Orkney, to these shores in the 14th century, as described in the Zeno narrative. This, of course, considerably antedates the voyage of Columbus.

Mr. Pohl is organizing a group for work in that region during the 1959 season, and would be glad to hear from any members who can aid in this endeavor. He is particularly desirous of obtaining the voluntary services of an archaeologist capable of conducting the dig in accordance with professional standards. Interested members may contact Mr. Pohl at 141 Columbia Heights, Brooklyn 1, New York.

We had fully intended to include in this issue a more detailed report of the basis of the site determination. Due to a lack of available space, this article will appear in a subsequent issue.